In the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A method for ~~improving~~ making a neural network prediction for an input data record being manufacturing process data selected from the group comprising data related to the materials used, composition data, parameters of the production system, pressure data and/or temperature data; the prediction being based on whether the input data record is in a working range of a neural network, wherein the working range is defined by a convex envelope formed by training input data records of the neural network, comprising the following steps:

(a) storing training input data records ~~for the neural network~~, forming the convex envelope ~~by means of the~~ using the training input data records,

(b) checking whether the input data record is in the convex envelope, in

(i) selecting a number $(d + 1)$ of non-collinear points from the set of training input records,

(ii) forming a first simplex (S_1) from the selected points,

(iii) selecting a point (x_l) from the interior of the first simplex (S_l),

(iv) defining a path between the input data record and the selected point,

(v) checking whether there is an intersection point (x_{l+1}) between the path and a facet of the first simplex, and

(vi) checking whether a second simplex (S_{l+1}) which contains the intersection point and a section of the path can be formed from the number of points from the training input data records,

(c) delivering a result that input data record is inside or outside the working range of the used neural network through confirming that the input data is respectively inside or outside the convex envelope; and

(d) ~~improving~~ making the neural network prediction by disregarding the input data record if it is outside the working range of the used neural network and processing the input data record by the used neural network ~~the input data record~~ if it is inside the working range.

2. (Canceled)

3. (Previously presented) The method according to Claim 1, further comprising the steps for checking whether a second simplex may be formed:

(vii) determining vertices of a facet of the first simplex on which the intersection point is located,

(viii) selecting a further, non-collinear point from the training input data records,

(ix) forming a simplex (*S*') from the vertices and the further point,

(x) checking whether the simplex contains a section of straight line, and outputting the simplex as a second simplex, if this is the case,

(xi) exchanging the further point for another, non-collinear point from the set of training input data records and renewed checking.

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (Canceled)

8. (Canceled)

9. (Canceled)

10. (Original) A computer digital storage medium program product for carrying out a method according to Claim 1.

11. (Canceled)

12. (Currently Amended) A method for ~~improving~~ making a neural network prediction for an input data record being manufacturing process data selected from the group comprising data related to the materials used, composition data, parameters of the production system, pressure data and/or temperature data; the prediction being based on whether the input data record is in a working range of a neural network, and wherein the working range is defined by a convex envelope formed by training input data records of the neural network, comprising the following steps:

(a) storing training input data records ~~for the neural network~~, forming the convex envelope ~~by means of~~ using the training input data records,

(b) checking whether the input data record is in the convex envelope, in

(i) selecting an initial vector $\lambda^{(0)} = (\lambda_1,\ldots,\lambda_n)$ with $\lambda_1 + \ldots + \lambda_n = 1$ and $\lambda_j \geq 0$ (j=1,...,n), where preferably $\lambda_j = \frac{1}{n}$ is selected,

(ii) selecting a matrix M in such a way that the lines matrix $\hat{P}^{(i)} := M \cdot P^{(i)}$ are orthonomal,

(iii) calculating $\lambda = \lambda^{(i)} + \hat{P}^{(i)T} \cdot \left(\hat{x} - \hat{x}^{(i)}\right)$, where $\hat{x}^{(i)} := \hat{P}^{(i)} \lambda^{(i)}$,

(iv) checking whether all $\lambda_j \geq 0$ (for j=1,..., n),

(v) deleting all components from the matrix $P^{(i)}$ and from the vector $\lambda^{(i)}$, which infringe the secondary condition $\lambda_j \geq 0$ (for j=1,...,n),

(vi) renewing calculating of λ, and

(c) delivering result that input data record is within or without the working range of used neural network through confirming that the input data is respectively inside or outside the convex envelope; and

(d) ~~improving~~ making the neural network prediction by disregarding the input data record if it is outside the working range of the used neural network and processing the input data record by the used neural network ~~the input data record~~ if it is inside the working range.